AGRICULTURAL ENGINEERING

CURRENT LITERATURE

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ENGINEERING

Vol. 4, No. 1. WASHINGTON, D. C. August, 1934.

Agriculture.

Iowa corn research institute. Iowa Agricultural Experiment Station and United States Department of Agriculture cooperating. 1934. 23p. mimeographed.

Legislation enacted by 73d Congress, second Session. 1934. 73p. mimeographed. U.S. Department of Agriculture budget and finance circular no. 5.

Michigan farm prices and costs, 1910-1934. By Orion Ulrey. 1934. 99p. Michigan. Agricultural Experiment Station. Technical bulletin no. 139.

Progress of the A.A.A. By Macdonald Brown. Farm Journal. v. 58, no. 8. August, 1934. p. 7. How the great price-raising campaigns are prospering. What farmers think of it so far.

Reliability and adequacy of South Dakota farm price data. By John Muehlbeier. 1934. 48p. South Dakota. Agricultural Experiment Station bulletin no. 286.

Air Conditioning.

Air conditioning uses and advantages studied by utilities. Heating and Ventilating. v. 31, no. 7. July, 1934. p. 23-28, 74. Uses and advantages of air conditioning for industrial purposes. Uses and advantages of air conditioning for commercial purposes. Uses and advantages of air conditioning for personal uses.

Application of air conditioning equipment on residential and commercial power circuits. By D. W. McLenegan and M. N. Halberg. Refrigerating Engineering. v. 28, no. 1. July, 1934. p. 21-24, 38.

Cooling home through attic. By Harry J. Lagodzinski. Building Material Digest. v. 3, no. 7. July, 1934. p. 4-5. If heat is extracted from home at night so that cool night air can enter, comfort and cooling is effected. By installing quiet running fan in attic, hot air is drawn up and out of home through attic door, or opening in ceiling, allowing cool night air to enter through windows. This type of system quickly cools interior of house, creating outdoor atmosphere in every room.

How to condition living room with units. By Harold L. Alt. Domestic Engineering. v. 143, no. 6. June, 1934. p. 81-83, 107. Presents typical outline to follow on jobs of this type.

Air Conditioning. (Cont'd)

Present status of air conditioning. Electrical World. v. 104, no.2. July 14, 1934. p. 55-56. Report of air-conditioning Subcommittee of Edison Electric Institute.

Refrigeration cycle as heating method, or the heat pump method of electric heating. By R. Wilkinson. Refrigeration, Cold Storage and Air-Conditioning. v. 5, no. 2. May 31, 1934. p. 19-25.

Some practical aspects of air conditioning. By W. Lincoln Boyden, Jr. Heating and Ventilating. v. 31, no. 7. July, 1934. p. 19-22.

Belts.

Belts and pulleys. By W. C. Krueger. 1934. 13p. New Jersey, Agricultural Experiment Station. Extension bulletin no. 126.

Building Construction.

Brick construction without a trowel. Brick and Clay Record. v. 84, no.7. July, 1934. p. 235, 237. Estimated costs for farm house of fabricated brick panels gives answer to demand for low cost housing, also saves building time.

Checking moment computations for rigid frames. By A. S. Niles, R.L. Vernier and W. A. Campbell. Engineering News-Record. v. 133, no.4. July 26, 1934. p. 112-114. Values obtained by Cross method of moment distribution verified by determining joint rotations by two independent formulas, also by using one of the formulas to check angular rotations of columns.

Comparative architectural details. Groups 13-A. Cupolas. Pencil Points. v. 15, no. 1. January, 1934. p. 19-26.

First CWA summary shows big building need. Domestic Engineering. v. 143, no. 6. June, 1934. p. 39-41. Twenty-five of sixty-three typical towns and cities surveyed in property inventory form basis of early report of plumbing and heating construction opportunities.

How to estimate the "cost-key" way. By A. W. Holt. American Builder and Building Age. v. 56, no. 5. May, 1934. p. 52-53, 67-69.

Influence of neighboring structures on the wind pressure on tall buildings. By C. L. Harris. 1933. 38p. Pennsylvania. Engineering Experiment Station. Bulletin no. 43.

Relative importance of properties of brick mortar. By W. R. McCaffrey. Canadian Engineer. v. 66, no. 24. June 12, 1934. p. 12. Mortar should be suitable for specific type of brick. Characteristics of mortars. Water retaining capacity.

Concrete.

Use of concrete on the farm. By J. C. McCrudy. 1934. 28p. Cornell University. Extension Service. Extension bulletin no. 285.

Cotton and Cotton Ginning.

Accuracy of the percentage of lint cotton determined on small laboratory gins. By J. T. Vantine. Journal of the American Society of Agronomy. v. 26, no. 6. June, 1934. p. 531-533.

Results of irrigation treatments on acala cotton grown in the Mesilla Valley, New Mexico. By A. S. Curry. 1934. 43p. New Mexico, Agricultural Experiment Station bulletin no. 220.

Dairy Farm Equipment.

How to sterilize dairy utensils. By C. A. Buck. Hoard's Dairyman. v. 79, no. 11. June 10, 1934. p. 262, 275.

Dams.

Design and construction of small dams. By Frederick X. Conrad. Public Works. v. 65, no. 5. May, 1934. p. 39-40.

Earth dam projects. By Joel D. Justin. New York, John Wiley and Sons, Inc., 1932. 345p.

30 years with storage dams. By William Lewis. Montana Farmer. v. 21, no. 21. July 1, 1934. p. 3.

Drainage.

Durability of mole drains. By H. H. Nicholson. Journal of Agricultural Science. v. 24, part 2. April, 1934. p. 185-191.

Effects of rainfall and temperature on percolation through drain gauges. By R. S. Koshal in consultation with R. A. Fisher. Journal of Agricultural Science. v. 24, part 1. January, 1934. p. 105-135.

Electric Wiring.

Wiring - the basis for satisfactory electric service. American Builder and Building Age. v. 56, no. 4. April, 1934. p. 64, 66, 80. How to specify for both low-cost and best grade work.

Electricity in the Home.

Electricity in the home. By Henry L. Logan. Architectural Record. v. 76, no. 1. July, 1934. p. 62-68. Part 2. Lighting.

Electricity on the Farm.

Use of electricity is farm economy. Oregon Farmer. v. 57, no. 11. June 28, 1934. p. 9. When farmers realize that economical operation and not convenience is paramount in their use of electricity, then will electrical energy be able to do its best for them.

Engineering.

Civil engineers publish revised salary figures. Engineering News-Record. v. 113, no. 4. July 26, 1934. p. 115-117. New report by Committee on salaries of American Society of Civil Engineers modifies March report on rates and sets up new classifications of positions. New York regional committee reports on similar subject.

Erosion Control.

Causes of erosion and various methods of shore protection. By W. M. Burgoyne. Canadian Engineer. v. 66, no. 24. June 12, 1934. p. 7-11. Waves and currents and their effect on coast line. Shore built up by construction of groynes. Various types of sea-wall described.

Government acts to stop soil losses. Wisconsin Agriculturist and Farmer. v. 61, no. 11. June 9, 1934. p. 5. Approximately $250,000 will be spent on Coon Valley project, by Soil Erosion Service of the Department of Interior, to demonstrate modern erosion control methods in Upper Mississippi Valley. This is one of twelve erosion projects in the United States for which $5,000,000 has been assigned by Secretary Ickes from public works appropriation made by last congress. Program, as outlined, will be huge community project involving co-operation of 750 farmers in reorganization of farming operations so as to reduce absolute minimum soil losses from hillside washing. Demonstration is designed to reduce erosion by prevention rather than by cure. Engineers in charge aim to convert steep slopes into productive forests and game cover and to improve gentler slopes by contour plowing, terraces, strip-farming, and soil-saving dams.

Search for plants to control soil erosion. Science. v. 80, no. 2064. July 20, 1934. p. 65-66. Two parties are abroad - one in Russia and one in Japan - and other parties will search western half of United States.

Soil blowing and its control. By Sam Sloan. Montana Farmer. v. 21, no.22. July 15, 1934. p. 5. Methods of control: 1. Regulate time of plowing and subsequent operations to periods when soil is moist and surface clods are formed. 2. Leave surface rough; beward of implements which pulverize surface soil. 3. Control weeds with duckfoot cultivator or rod weeder which do not disturb surface soil. 4. Plant cover crops in strips or solid after second operation. 5. In some areas summer fallow substitutes such as corn may be used on most exposed fields. 6. Limit size of areas of fallow in one field or in adjacent fields. Advantages of strip farming: 1. Prevents soil blowing. 2. Insures 50-50 proportion of fallow and crop. 3. Encourages better type of farming. 4. Provides for variety of crops in same field without inconvenience. 5. Make it convenient to provide for pure seed lot. 6. Allows operator to take advantage of uneven ripening in different parts of field - reduces hail hazard. 7. Is practical for large units operated with large type machinery. Disadvantages: 1. Requires more turning and leaves more corners to work out. 2 May mean loss of some land at ends of strips. 3. Some ridges may be formed along west side of stubble strips if strips are too wide, may necessitate moving strip of weeds in fall along west side of stubble strip. This can be large obviated by back furrowing along grain when plowing fallow strips. 5. Leaves more borders to poison in case of grasshopper infestation. 6. Operating costs slightly higher.

"Undisclosed assets" - disposing of silt. Dakota Farmer. v. 54, no. 12. June 9, 1934. p. 260-261. Influence of erosion and deposits of sediment occasioned thereby, together with transport possibilities, are discussed. Silt must be stopped at or near its source. Silt in last 100 years has built the Mississippi, aided by levee system, high above its surrounding country. The Missouri, which is great silt carrier, must be controlled and in its control lies partial solution of flood control of lower Mississippi.

Erosion Control. (Cont'd)

We can stop soil washing. By L. L. Lonsdorf. Kansas Farmer. v. 72, no. 11. June 5, 1934. p. 22. Contour cropping, with rows of close-drilled crops and row crops planted on the level, is doing much to control soil erosion and conserve rainfall.

Explosives.

Handling and using explosives. Public Works. v. 65, no. 5. May, 1934. p. 11-12.

Extension.

Twentieth annual report of the extension division, year 1933. 1934. 117p. Oklahoma. Agricultural and Mechanical College. Circular no. 313.

Farm Buildings and Equipment.

Bin method of mixing feed. By Hobart Beresford and F.W. Atkeson. 1934. 16p. Idaho. Agricultural Experiment Station. Bulletin no. 203.

Fair barn viewed as farm model. American Builder and Building Age. v. 56, no. 8. August, 1934. p. 46-47. Zeiss-Dywidag system of shell roof construction.

Low-cost steel units introduced. American Builder and Building Age. v. 56, no. 8. August, 1934. p. 48. New "Steelox" method demonstrated at World's Fair. Farm use emphasized.

Square type sunlit barn saves 30 per cent. By Jos. B. Clay. American Builder and Building Age. v. 56, no. 4. April, 1934. p. 52-53. High Gothic center with roof-lighted leantos provide healthful stable. More light - more stock capacity - less wall area - less cost.

U. S. survey shows great farm building need. American Builder and Building Age. v. 56, no. 4. April, 1934. p. 50-51.

Farm Machinery and Equipment.

Equipping mower to cut oats and vetch. Pacific Rural Press. v. 127, no.23. June 9, 1934. p. 533. Necessary to obtain 13 stub-guards for attaching to cutter-bar. There are 19 guards regularly attached which leaves difference of six. Lips on remaining six should be sawed off and smoothed down and these 6 guards should be placed on cutter-bar with 2 stub-guards between adjacent regular guards in which lips have been removed. These regular guards then form base for attaching lifter guards. Picture shows cutter-bar with stub-guards and regular guards from which lips have been removed. Cut also shows one of special lifter guards attached over one of regular guards. Also shows position of remaining regular guards over which lifting guards should be attached.

Farm Machinery and Equipment.(Cont'd)

Farm problems and the machine. By Harry G. Davis. Scientific American. v. 149, no. 5. November, 1933. p. 222-223. Example of building down machines can be found in case of combined harvester-thresher. This machine was originally brought out for large wheat growers. It cut a swath of 20 feet or more, and threshed grain in one operation. While it was most efficient on large farms, it was too big amd costly for smaller farmers. New models, smaller in size amd lower in price, appeared,and combine began to spread into diversified farming areas. Just recently, daily newspapers have printed stories about demonstration of baby combine on an Indiana farm. This machine weighs only 2,400 pounds, sells for less than $500, and with it, if we believe the press stories, farmer can cut and thresh 20 or more acres of standing grain a day. It is designed, its manufacturers say, for use on corn belt farms where acreage of small grain is comparatively small, but where low costs are just as imperative as on larger acreages of wheat belt.

Flushing bar reduces bird mortality. National Waltonian. v. 1, no. 11. May, 1934. p. 9, 15. Directions for making simple device, which if attached to mower will save many game birds, their nests and young.

Prolonging plowshare service. By Hobart Beresford and Elmer N. Humphrey. 1934. 8p. Idaho. Agricultural Experiment Station. Bulletin no. 202.

Those good old days. Would you like to go back? Wisconsin Agriculturist and Farmer. v. 61, no. 11. June 9, 1934. p. 3. No. 4. Wheels.

Farm Mechanics.

Saw filer must use care. By L. J. Smith. Idaho Farmer. v. 52, no. 12. June 14, 1934. p. 15. Article No. 2. Shape of teeth and slope of cutting edge important.

Fences.

Those good old days. Would you like to go back? No. 5: Fences. Wisconsin Agriculturist and Farmer. v. 61, no. 12. June 23, 1934. p.6.

Flood Control.

Proceedings, Flood Control Conference, 1934. 49p. Mimeographed. Conservation Association of Los Angeles County, Los Angeles, California.

Floors.

Doing over old floors. By R. B. Browne. American Home. v. 11, no. 5. April, 1934. p. 273, 291-292. Oak and maple parquet floors. For a waxed floor. Stained floors. Oiled floors. Painted floors. Care of all floor finishes.

Floor panels with stressed plywood coverings. By Geo. W. Trayer. 1934. 6p. Forest Products Laboratory, Madison, Wisconsin.

Flow of Water.

Investigation of the flow of water under Khanki weir and the pressures on the floor. By E. McKenzie Taylor and Harbans Lal Uppal. 1934. 34p. Punjab Irrigation Research Institute Research Publication v. 2, no.6.

Investigation of the pressures on works on sand foundations. By E. McKenzie Taylor and Harbans Lal Uppal. 1934. 14p. Punjab Irrigation Research Institute. Research Publication v. 2, no.5.

Frost Protection.

Frost prevention by orchard heating. By J. B. Harris. Journal of Department of Agriculture of South Australia. v. 37, no. 6. January 15, 1934. p. 649-663.

Gas Producers.

Dead or alive? Power gas producer is alive. By Ludwig Lustig. Power. v. 78, no. 8. August, 1934. p. 457-459. Practical, easy to operate and notably cheap source of power and process heat.

Hay.

How better alfalfa hay is made. Hoard's Dairyman. v. 79, no. 11. June 10, 1934. p. 254. Purpose of article is to tell how better alfalfa hay can be made with less labor by right use of side delivery rake and windrow hay loader. Advantages of method are: 1. Saving larger portion of leaves. 2. Preserving palatability of hay. 3. Curing hay more thoroughly and uniformly. 4. Overcoming some of weather hazards. 5. Reducing man labor. Method is comparatively simple where complete line of modern hay tools is available. Curing is all done in windrow, with no cocking or spreading by hand in good weather or bad. Hay is handled by machinery from swath to mow.

Heating.

Cautions regarding gas-appliance attachments. By John H. Eiseman. 1934. 11p. U.S. Bureau of Standards. Circular no. 404.

Combustion tests reveal losses. By Frederick Carnes. Fuel Oil. v. 13, no. 2. August, 1934. p. 8-9, 57-60. Operating efficiencies of 64 Maine burners listed.

Economics of house heating with gas fired equipment. By Thomson King. Domestic Engineering. v. 144, no. 1. July, 1934. p. 68-70, 101.

List of approved gas appliances as of July 1, 1934. 90p. American Gas Association, Inc., Testing Laboratory, Cleveland, Ohio.

Progress in thermostatic control. By N. B. Delavan and R. H. Luscombe. Aerologist. v. 10, no. 8. August, 1934. p. 10-13, 28-29.

Simplified check for heat value of coal. By A. Bement. Power Plant Engineering. v. 38, no. 8. August, 1934. p. 380-381.

Tests show oil burner performance. By E. M. Fernald. Domestic Engineering. v. 114, no. 1. July, 1934. p. 64-67, 83.

Houses.

Farm housing survey. By H. B. White. 1934. 1p. University of Minnesota. Agricultural Engineering News-Letter, no. 28.

Four-room farm house. Montana Farmer. v. 21, no. 21. July 1, 1934. p. 10.

Guide to home reconditioning for borrowers from Home Owners' Loan Corporation. Federal Home Loan Bank Board, Washington, D.C. 1934. 6p.

National housing act, to encourage home modernizing, passed and approved. Heating and Ventilating. v. 31, no. 7. July, 1934. p. 35, 74-75. Five titles are included in act as passed. One creates administration and outlines powers and duties; another is devoted to mutual mortgage insurance; third permits formation of national mortgage associations; fourth has to do with insurance of savings and loan accounts; while last contains miscellaneous provisions designed to bring existing laws into line with new act.

New farm homes are tested. U.S. approved. American Builder. v. 56, no. 7. July, 1934. p. 26-29. Recommended by U. S. Agriculture Department.

1934 World's Fair homes show progress. American Builder and Building Age. v. 56, no.5. May, 1934. p. 48-49. New features in home planning and building to be displayed on Chicago's Lake front this summer.

Significant financial data on housing being completed. Domestic Commerce. v. 14, no. 3. July 30, 1934. p. 27. Special study being made in connection with National Real Property Inventory. Detailed information has been obtained from tenants on rentals and rental terms, income of family from regular employment, and income from renting rooms. Owners who occupied their own homes have given facts about value of their property, mortgage status, and if mortgaged, amount of mortgage, lending agency, rate of interest charged, and number of other significant facts, none of which has hitherto been available. Similar reports have been secured from owners of rented property. From these financial items it will be possible to formulate firm basis for making real estate loans. Relative cost of borrowing from different types of lending agencies will also be known, since actual rates of interest will be computed as well as nominal rates. Analysis is now being made of figures gathered, but no reports are available as yet.

Six little houses ideal for summer use. American Home. v. 11, no. 5. April, 1934. p. 261-266.

65 per cent need repairs! American Builder and Building Age. v. 56, no. 5. May, 1934. p. 40-41. First reports from Government survey of dwellings show critical upkeep conditions with few vacancies and much overcrowding.

Specifications, schedule and drawings. Five-room frame cottage and outbuildings at Wippel pumping plant. Yakima project, Washington. 1932. 26p. Mimeographed. U.S. Bureau of Reclamation. Specifications no. 578-D.

Schedule, specifications and drawings. Fourteen three-room and sixteen four-room residences at Government camp at Grand Coulee dam. 1934. 60p. U.S. Bureau of Reclamation. Specifications no. 576.

Houses. (Cont'd)

Specifications, schedule and drawings. Thirty three-room residences at Boulder City, Nevada. 1932. 41p. Mimeographed. U.S. Bureau of Reclamation. Specifications no. 564-D.

Steel framing for small residences: Guidebook for architects and builders. Subsidiary Companies of United States Steel Corporation, Pittsburgh, Pa. 1933. 54p.

Hydroelectric Plants.

Practical intake designs for small hydro plants. By R. Johnson. Electrical World. v. 103, no. 25. June 23, 1934. p. 902-903. Pioneering water-power installations require departures from standard practices. Intake designs important.

Insulation.

Chart shows safe values for insulation resistance. Power. v. 78, no.8. August, 1934. p. 446-447.

Irrigation.

Don't wait too long to irrigate the crop. Oregon Farmer. v. 57, no. 11. June 28, 1934. p. 16.

Effect of irrigation on soil salts at the Gezira research farm, Wad Medani, Sudan. By H. Greene and R. H. K. Peto. Journal of Agricultural Science. v. 24, part 1. January, 1934. p. 42-58.

Irrigation experiments with prunes. By A. H. Hendrickson and F. J. Veihmeyer. 1934. 44p. California. Agricultural Experiment Station. Bulletin no. 573

Irrigation waters for horticultural purposes in South Australia. By George Quinn. Journal of Department of Agriculture of South Australia. v. 37, no. 9. April 16, 1934. p. 1112-1114.

Planning a flood-water system. By Frank T. Kelsey. Montana Farmer. v.21, no. 21. July 1, 1934. p. 3. Each flood water irrigation project must be studied by itself. Much depends on extent and character of drainage area, and amount and composition of silt.

Large amounts of flood water flowing over alkali land will dissolve and carry away alkali and with rich deposit of silt, build up ideal soil. Sufficient flood water should increase production from two to five times and for hay and field crops we have found it very satisfactory.

Selecting equipment for irrigation. By Richard Boonstra. Electricity on the Farm. v. 7, no. 8. August, 1934. p. 7-8, 18.

Land.

Some uses for idle acres. Idaho Farmer. v. 52, no. 12. June 14, 1934. p. 10. Seven possibilities for land taken out of wheat. These uses are: (1) Let land lie idle; (2) summer-fallow; (3) plant permanent pastures for future use; (4) plant meadow crops for future use; (5) practice weed control on land; (6) plant forest trees for windbreak or farm use; (7) plant soil improvement crops for plowing under.

Land. (Cont'd)

What is the future of our lands? By Edward L. Dennis. Washington Farmer. v. 69, no. 14. July 12, 1934. p. 3. Eminent British authority brings interesting information on a sister nation's land utilization program.

Lubrication.

Prediction of lubricant performance. Lubrication. v. 20, no. 7. July, 1934. p. 73-80. Relation of specifications to operating requirements.

Miscellaneous.

Agricultural Department Appropriation Act of 1935: Editorial. Experiment Station Record. v. 71, no. 1. July, 1934. p. 1-4.

Forty-sixth annual report for the year 1933-34. 1934. 61p. Georgia Agricultural Experiment Station.

Interpretation of codes in Federal construction. By Howard L. Jones. Engineering News-Record. v. 113, no. 4. July 26, 1934. p. 105-106. Review and explanation of executive orders affecting interpretation of codes of fair competition as affecting bidders for Federal construction.

List of publications and other printed material of the Agricultural Adjustment Administration. May 12, 1933 to June 1, 1934. Washington, U. S. Government Printing Office, 1934. 25p.

Minutes of proceedings of the Institution of Civil Engineers. London, 1934. 528p.

Missouri River Diversion Project.

Drought relief by flood control: Study of the Missouri river diversion project. By Earle R. Buell. 1933. 44p. Missouri River Diversion Association, Devils Lake, North Dakota.

Missouri river diversion project in North and South Dakota. 1930. 8p. Missouri River Diversion Association, Devils Lake, North Dakota.

Report on Missouri river dam and diversion project in North Dakota and South Dakota. Kansas City, Burns and McDonnell Engineering Company, 1933. 41p.

Motors.

Which motor? Which control? By George H. Hall. Electrical World. v.104, no. 4. July 28, 1934. Reviews available types, gives their characteristic and shows how controls may be used to modify them better to fit motor to specific service required. Practical, semi-technical approach to selection of modern motors and controls that they may do their tasks in industry to best advantage of users, power company and manufacturer.

Painting.

Can't afford not to paint. By A. Carnes. Progressive Farmer. v. 49, no.7. July, 1934. p. 16. Unpainted wood surface is porous and admits water easily. After lumber is wet, drying action frequently results in cracked surface. These conditions favor growth of fungi and bacteria that cause decay. On the other hand, if surface is properly painted, easy access of water and injurious fungi will be prevented. Therefore painting largely prevents decay or rotting. Painting aids sanitation by closing cracks and crevices which would otherwise harbor disease germs and small insect pests. Painted surface is more easily cleaned and stays clean longer than unpainted surface.

Painting exterior woodwork. By F. L. Browne. 1934. 5p. Mimeographed. Forest Products Laboratory, Madison, Wisconsin.

Pipes and Piping.

Easy method of figuring tilted pipe bends. By Lynn W. Millspaugh. Power Plant Engineering. v. 38, no. 8. August, 1934. p. 358-360. Table 1 Formulas for calculating dimensions of pipe bends. Table II. Formulas for circulating angles of pipe bends.

How to size water supply piping for homes. By F. M. Dawson. Domestic Engineering. v. 143, no. 6. June, 1934. p. 46-48. Experiments have been correlated with studies and investigations of other organizations, and results combined in form of bulletin no. 77 of University of Wisconsin Engineering Experiment Station.

How to size water supply piping for homes. By F. M. Dawson. Domestic Engineering. v. 144, no. 1. July, 1934. p. 36-38, 44.

Requirements for welded piping joints. By Sabin Crocker. Heating, Piping and Air Conditioning. v. 6, no. 8. August, 1934. p. 339-342. Given in proposed American Standards Association for code pressure piping.

Poultry Houses and Equipment.

Economy range shelter. By Bill Monahan. New England Homestead. v. 107, no. 13. June 23, 1934. p. 6. Economy of cost and construction time are features of this new shelter for pullets.

Growing and housing better pullets. By W. H. Rice. 1934. 12p. University of Maryland. Extension Service. Circular no. 108.

New Jersey multiple unit laying house and bill of material. By E. R. Gross and H. E. Besley. 1934. 15p. New Jersey Agricultural Experiment Station. Circular no. 318.

Power.

Selection of equipment for economy. By Linn Helander. Power Plant Engineering. v. 38, no. 7. July, 1934. p. 321-324. Part II. Procedure in selection of equipment to provide either additional capacity or new service of kind that is conducive to economy.

Public Works.

P. W. A. allots $36,000,000 for two Federal projects. Electrical World. v. 104, no. 3. July 21, 1934. p. 92. To carry on work on Fort Peck dam and reservoir in eastern Montana, and to complete large power, navigation and flood control project on Columbia River at Bonneville, Oregon. Fort Peck allotment of $25,000,000 brings total to $50,000,000 allocated by P.W.A. for project. $11,000,000 allotted to Bonneville project follows original disbursement of $20,000,000, and is estimated to be sufficient to bring project to completion.

Refrigeration.

Biology and refirgeration. Ice and Cold Storage. v. 37, no. 436. p. 113-115. Discussion of bacterial growth on tissues.

Iceless refrigerator. Montana Farmer. v. 21, no. 21. July 1, 1934. p. 11.

Life tests and refrigerators. By R. T. Frazier. Refrigerating Engineering. v. 28, no. 1. July, 1934. p. 18-20, 38. Means of evaluating construction, with some test results.

Measurement of humidity. By H. H. Edwards. Ice and Cold Storage. v. 37, no. 435. June, 1934. p. 93-95. Important aspects of vapour pressure.

Thermodynamic computations. By Bernard C. Oldham. Ice and Cold Storage. v. 37, no. 436. July, 1934. p. 109-110. Uses of charts in refrigeration.

Thermodynamic properties of ammonia. Ice and Cold Storage. v. 37, no. 435. June, 1934. p. 96-97. New chart embodying latest data.

Truck refrigeration adds an off-peak electric load. Electrical World. v. 104, no. 4. July 28, 1934. p. 115. Usual truck is equipped with three units and coils to carry refrigerating liquid (cryohydrate) mounted in well-insulated body. Small refrigerating plant is suspended at side under body. At night refrigerating unit is connected to garage circuit and temperature of cryohydrate reduced until it solidifies.

Use of direct expansion coils. By E. V. Hill. Aerologist. v. 10, no. 8. August, 1934. p. 7-9, 30. Table gives characteristics of refrigerants for standard temperatures of 86° in condenser and 5° in evaporator.

Research.

Research and adjustment march together. By Henry A. Wallace. Extension Service Review. v. 5, no. 6. June, 1934. p. 81.

Roofs.

To solve the over-roofing problem. By Bror L. Grondal. American Builder and Building Age. v. 56, no. 4. April, 1934. p. 44.

Silos.

Emergency silo to save feed in a dry year. By Dan M. Braum. Agricultural Leaders' Digest. v. 15, no. 4. July, 1934. p. 16, 18. Consists of cribbing or snow fencing lined with re-enforced waterproof paper. Cribbing is set up in circle 16 to 19 feet in diameter and securely wired together at loose ends. This provides shell sufficiently strong to hold silage. Since successful storage of ensilage is dependent on keeping air away from it, next essential is good liner for this shell. Sisal re-enforced paper has strength to withstand pulls when silage settles and when treated to resist fungus rot it has been found entirely satisfactory for this silo use.

Methods and costs of filling silos in the north central states. By Kenneth H. Myers. 1934. 22p. U. S. Department of Agriculture. Farmers' bulletin no. 1725.

Silo filling meets drought need. Implement & Tractor Trade Journal. v. 49, no. 15. July 28, 1934. p. 8-9. Modern silage equipment operates more efficiently and with greater economy, at same time reducing number of men required.

Wooden-hoop silo cheap, efficient. By Joseph Belanger. Oregon Farmer. v. 57, no. 14. July 12, 1934. p. 3. Requires no specially constructed doors or door frames and hardware cost is negligible.

Snow.

Proceedings of the Western Interstate Snow Survey Conference at the Nevada Agricultural Experiment Station, February 18, 1933, June 28, 1933. University of Nevada, 1934. 89p.

Soil Moisture.

How to stretch limited moisture. By E. R. Parsons. Western Farm Life. v. 36, no. 6. June 15, 1934. p. 14-15. Through proper tillage methods natural precipitation meets crop requirements.

Soils.

Determination of soil condition for scientific study of farm tractor. By Prof. Tony Ballu. Monthly Bulletin of Agricultural Science and Practice. v. 25, no. 5. May, 1934. p. 219-221. Discussion of experimental method for determining physico -mechanical state of soil at a given moment.

Interpretation of soil tests. By M. F. Morgan. American Fertilizer. v. 80, no. 7. April 7, 1934. p. 5-7, 30. Reprinted from Circular 95 of Connecticut Agricultural Experiment Station, New Haven, January, 1934.

Storage.

Influence of storage temperatures on the rest period and dormancy of potatoes. by R. C. Wright and Walter M. Peacock. 1934. 22p. U.S. Department of Agriculture. Technical bulletin no. 424.

Storage for the farm home. By Madonna Fitzgerald and C. V. Phagan. 1934. 12p. Oklahoma Agricultural and Mechanical College. Extension Service. Circular no. 312.

Subsistence Homestead.

Federal program for subsistence homesteads. Engineering News-Record. v. 113, no. 4. July 26, 1934. p. 107-108. About 40 projects established and $10,000,000 allotted to provide modern houses and small acreage where subsidence agriculture can be combined with part-time or seasonal industrial employment.

Terracing.

Terraces for erosion. Hoard's Dairyman. v. 79, no. 10. May 22, 1934. p. 230.

Tractors.

Cooperative tractor catalog: National encyclopedia of tractors and power farming machinery including Nebraska state tractor tests. 1934. 228p.

Tunnels.

Driving 91 miles of tunnels on Colorado River aqueduct. By R. M. Merriman. Engineering News-Record. v. 113, no. 4. July 26, 1934. p. 97-105. Methods and equipment as well as rock formation vary widely in 47 headings. Full-face drilling, automatic drills and improved muck handling are typical factors in progress.

Walls.

Crib retaining walls. Public Works. v. 65, no. 3. March, 1934. p. 18, 44-45.

New brick wall provides air conditioning. Brick and Clay Record. v. 84, no. 6. June, 1934. p. 197. Farrenwall system. This type of construction gives hollow wall having four inch air space in center. Brick used are larger than standard size and there are no continuous mortar joints through wall, yet it is thoroughly bonded together with brick giving it lateral strength. It is claimed to be thoroughly dry wall. In actual operation controlled air condition is obtained as follows: Air from upper rooms and basement rooms is taken into hollow space in the Farrenwall, conducted through it and into hollow tile beneath basement floor. From there it moves into underground tunnel from whence it passes through conditioning process and then to furnace where, in winter time it is heated and distributed by fan to various rooms of building. In summer conditioned air is said to be 17 to 19 degrees cooler than outside atmosphere. Fact that air is delivered under pressure makes it possible to use small hot air pipes and registers, and there are no ducts to clutter up basement.

Plywood as a structural covering for frame walls and wall units. By Geo. W. Trayer. 1934. 15p. Mimeographed. Forest Products Laboratory, Madison, Wisconsin.

Water-tightness of masonry walls depends on mortar properties. By L. A. Palmer. Brick and Clay Record. v. 84, no. 6. June, 1934. p. 208-210. Report of work done at Bureau of Standards under auspices of National Lime Association, in an effort to determine practical and efficient bonding medium.

Walls. (Cont'd)

Well points dry seaside trench for Fort Monroe wall construction. Engineering News-Record. v. 113, no. 6. August 9, 1934. p. 163-166. Drainage system eliminates cofferdam in building 9,000 ft. concrete seawall at Virginia army post. Multiple-lead piledriver speeds up foundation work. Exposed face of wall designed as compound curve to deflect waves.

Water Power.

Seventh annual report of Division of Water Power and Control for the year ending December 31, 1933. 1934. 21p. New York Conservation Department.

Water Supply.

Engineering aspects of present midwest drought. Engineering News-Record. v. 112, no. 26. June 28, 1934. p. 834-835. Precipitation of 50 per cent normal from January to May over twelve states sets new low-flow record for rivers, depletes groundwater supplies and threatens public water supplies for late summer. Drifting sand causes highway problems.

Flow in Ohio streams at record low. By Joseph I. Perrey. Engineering Experiment Station News - Ohio State University. v. 6, no. 3. June, 1934. p. 21-22.

Physiography and ground-water supply in the Big Hole basin, Montana. By Eugene S. Perry. 1934. 18p. Montana Bureau of Mines and Geology. Memoir no. 12.

Progress in control of artesian water supplies. By O. E. Meinzer. Engineering News-Record. v. 113, no. 6. August 9, 1934. p. 167-169. Appreciation of importance of underground water resources has stimulated study of artesian water supplies and program of conservation. Two important examples are at Honolulu, T. H., and Roswell, N.M.

River surveys about completed. Engineering News-Record. v. 113, no. 4. July 26, 1934. p. 108. Comprehensive surveys of more important river systems of country being made to provide basic information for development of these streams have been practically completed. Surveys have been made on 199 rivers. Information resulting from these surveys will enable co-ordinated programming of water development on these streams which will effect savings exceeding cost of surveys by many times. Work carried on by U.S. Army engineers.

Southeast streams are normal and reservoirs full, but groundwater is low. Engineering News-Record. v. 113, no. 6. August 9, 1934. p. 188.

Storing precious floodwaters. By J. King Gibbs. Montana Farmer. v. 21, no. 19. June 1, 1934. p. 5, 23.

Stream-gaging research in Iowa. Engineering News-Record. v. 113, no. 4. July 26, 1934. p. 106. Cooperative stream-gaging in Iowa, carried on from 1917 to 1927, and then discontinued largely because of lack of financial support, was re-established in 1932. In progress report for period since work was resumed there is given list of 32 existing gaging stations on nine major watersheds - including Des Moines, Skunk, Iowa, Cedar, Wapsipinicon, Maquoketa, Turkey, Upper Iowa and Little Sioux rivers.

Water Supply. (Cont'd)

Artificial controls and cableways are being constructed to increase accuracy of gaging low flows, since some former records have been in error several hundred per cent. Compilations are being made of available data on rainfall and surface-water supplies, so valuable to engineers planning and designing water supply, sewage disposal, water power, navigation, flood control and conservation. Existing data on precipitation intensity and frequency, water losses, flood discharge and frequency, statistics of 50 hydro-electric power plants and brief description of all streams except smallest creeks, are being brought together for publication.

Water problem mostly rural in central drought area. Engineering News-Record. v. 113, no. 6. August 9, 1934. p. 181-185. Small communities in States west of Mississippi which depend on surface water impounded in small reservoirs are chief drought sufferers other than individual farmer.

Water System.

Adding hot water to the kitchen. Farmer and Farm, Stock and Home. v. 52, no. 11. May 26, 1934. p. 6. Gives diagram.

Efficient water system. By J. A. Coghill. Montana Farmer. v. 21, no. 21. July 1, 1934. p. 10.

Running water is first requirement. Oregon Farmer. v. 57, no. 11. May 31, 1934. p. 13. Farm home convenience most sought after by 6,000 Oregon housewives is running water in house. In western Oregon there are many locations suitable for installing hydraulic rams. They have their limitations, but where home is close to stream of good water they offer real possibilities. With storage tank to carry over still days, windmill provides satisfactory water supply at little expense. Wind velocities as low as 10 miles per hour will lift 320 gallons or more 25 feet in hour. Automatic water systems for both shallow and deep wells, operated by electric power, are increasing in Oregon. It is possible to install good shallow-well system for less than $75.

Water running for Mother instead of Mother running for water. By H. J. Gallagher. Electricity on the Farm. v. 7, no. 8. August, 1934. p. 4-6.

Waterworks.

Modern waterworks and sewerage practice. 1933. 95p. Reprinted from waterworks and sewerage magazine.

Weather.

Study of weather record fails to reveal long-range cycles. Engineering News-Record. v. 113, no. 2. July 12, 1934. p. 46-47. Comparisons of records at scattered stations for cycles of 11, 23 and 35 years indicate long-range forecasts would have been wrong about one-half the time.

Weather repeats itself like seasons. Popular Mechanics. v. 61, no. 2. February, 1934. p. 216. Discovery of what appears to be fundamental climate cycle in nature, second only to year itself, has been announced by Dr. Charles G. Abbot, secretary of Smithsonian Institution. It is

Weather. (Cont'd)

double sun-spot period, also known as Hale's magnetic cycle, an interval of twenty-three years, and it is indicated that weather everywhere substantially repeats itself at twenty-three-year intervals.

Weeds.

Weed control by sulphuric acid spraying. Implement and Machinery Review. v. 60, no. 709. May 1, 1934. p. 62, New machinery for use on cereal crops.

Welding.

Electric arc welding. By E. N. Spence. Ice and Refrigeration. v. 87, no. 2. August, 1934. p. 84-85. Practical application of electric arc welding process to industry. Metallic arc and carbon arc welding. Use on variety of metals.

Wells.

Pollution of wells and its prevention. By Willem Rudolfs. 1934. 8p. New Jersey. Agricultural Experiment Station Extension bulletin no. 127.

Well capacity tested by measuring rate water can be introduced. By John A. Oakey. Engineering News-Record. v. 112, no. 20. May 17, 1934. p. 629. This "flow-in" method is based on assumption that resistance offered by substrata to flow of water is same regardless of direction of flow. Method is applicable of course only where there is ample and convenient source of supply. Disadvantages of described method are requirement of ample and convenient water supply and condition of normal water level in well which will make possible necessary build-up. On other hand, if these conditions exist, method provides rapid and inexpensive method of well testing without interfering with drilling process or waiting for installation of pumping equipment.

Wind Pressures.

Tall building wind design to be studied by model. By George E. Large and Samuel T. Carpenter. Engineering News-Record. v. 112, no. 20. May 17, 1934. p. 637-639. Fifty-six story steel model 28 feet high being built at Ohio State University to check Spurr method of design.

Windbreaks.

Farm windbreak. By F. B. Trenk. 1934. 15p. Winconsin College of Agriculture. Extension Service. Circular no. 267.

Ten pointers on tree windbreaks. 1934. 4p. Purdue University. Department of Agricultural Extension. Leaflet no. 189.

Wood Preservation.

Control of termites in buildings. By T. H. Parks. 1933. 7p. Ohio Agricultural College. Extension Service. Bulletin no. 143.

Michigan termites or "white ants". By E. I. McDaniel. 1934. 14p. Michigan Agricultural Experiment Station. Circular bulletin no. 150.

Termites and termite control American Lumberman. no. 3023. June 9, 1934. p. 42.